Opportunities in Flipped Learning
Student Voice and Inclusive Curricula

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University Theme Lead (Student Success & Academic Development)

General Principles

Things to consider for effective teaching and learning

What is the best use of the students' own time?
What is the best use of the time I have with the students?
i.e. how to partition these activities:

Passive Learning (watching, listening, reading)
Reviewing Material
Active Learning (practicing, interacting, discussing)

Who is the <u>best</u> placed person to do things?
i.e. who should input on:

Intended Learning Outcomes
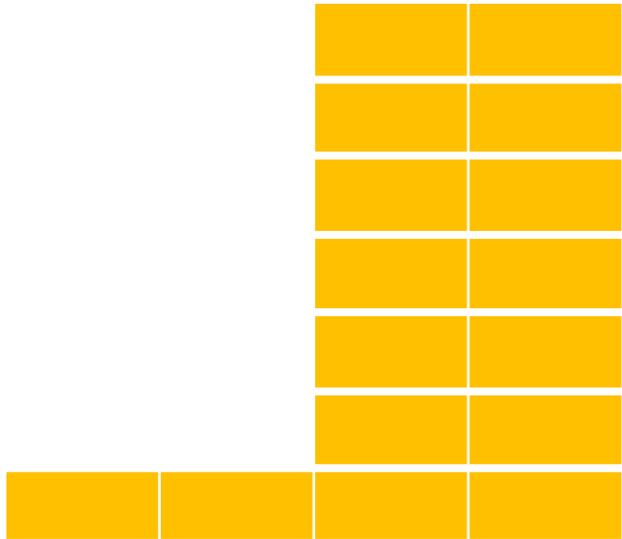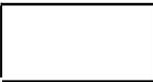**Lecture Content**
Formative / Practice Questions
Assessments

Large Group Teaching
Traditional CHEM Unit (7 Lectures, 1 Workshop)

Pre-session

In session

Lect.	1									
Lect.	2									
Lect.	3									
Lect.	4									
Lect.	5									
Lect.	6									
Lect.	7									
work-	shop									

☐ = 5 minutes

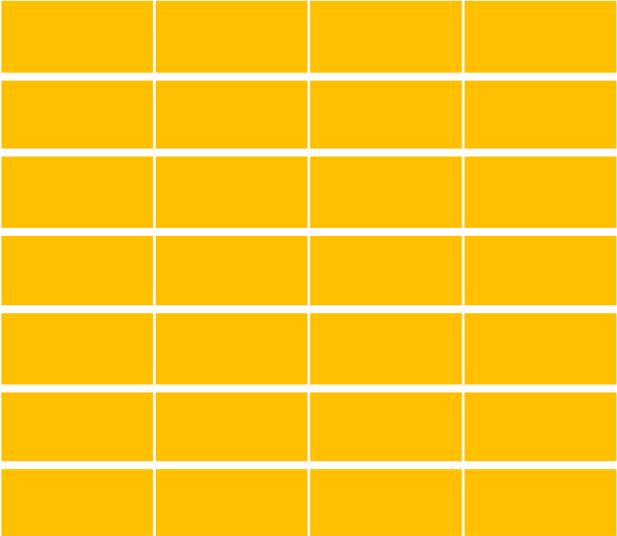Key: **Passive Learning** **Reviewing Material** **Active Learning**

Large Group Teaching

Split Lecture CHEM Unit (50-50ish Split)

Pre-session

In session

Intro.	Lect.									
Lect.	1									
Lect.	2									
Lect.	3									
Lect.	4									
Lect.	5									
Lect.	6									
Lect.	7									
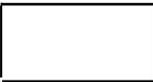
= 5 minutes

Key: **Passive Learning**   **Reviewing Material**   **Active Learning**

The Split Lecture Trial
UEQ Feedback 2018

Please provide details of what you valued about this unit:

"...Structure of lectures good, 25min lectures with rest workshop was good to learn content from Nick."

"Nick Weise's [lectures?] were 25 minutes long with a chance to answer questions afterwards, which helped to see what was relevant from the content."

"The lecturer on enzymes gave us example questions in his lectures. This was the most useful thing ivr [sic] seen in my course so far as a whole. It will really help with exams."

What aspect of Prof. /Dr. Nicholas Weise's approach to teaching best helped your learning?

"The lecture style with half the time of him lecturing and half the time a workshop. ..."

"Short lectures with built in workshops really helped as I struggle to focus for an entire lecture."

"The lectures were only 25 minutes long and had a workshop attached ..."

"Not talking at you for a full hour, the breaks to do example questions were good"

"Provided questions in every lecture to reflect on what we learnt. Most likely one of the most useful aspects of teaching I have seen in this course. Very helpful."

"The workshop questions at the end of each session was a fantastic way to reinforce what we had just learnt."

"Lecture structure 20mins lecture and 30mins activity. Helped to stay engaged and interested in lectures and practice content to get an understanding of exam questions."
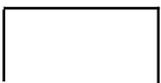
Large Group Teaching
Flipped CHEM Unit (Videos + Feedback Classes)

Pre-session

In session

Intro.	Lect.									

Video	1		

Video	2		
Video	3		
Video	4		
Video	5		
Video	6		
Video	7		

									Feed-	back	

= 5 minutes

Key: **Passive Learning**   **Reviewing Material**   **Active Learning**

Large Group Teaching
Flipped CHEM Unit (Videos + Feedback Classes)

What is the best use of the students' own time?
What is the best use of the time I have with the students?
i.e. how to partition these activities:

Passive Learning
Reviewing Material
Active Learning

> student's own time
> both / either
> my time with the students

Aldolase Biocatalysts
Nick Weise
7:40

Amine Oxidase Biocatalysts
Nick Weise
6:29

Who is the <u>best</u> placed person to do things?
i.e. who should input on:

Intended Learning Outcomes
Lecture Content
Formative / Practice Questions
Assessments

> Lecturer (trained in T&L, subject 'expert')
> Lecturer (trained in T&L, subject 'expert')
> **PASS Leaders (trained in T&L, have experienced the unit)**
> Lecturer (trained in T&L, subject 'expert')

The Flipped Learning Trials

UEQ Feedback 2019 (still Pre-COVID)

"Enjoyed Dr Nick Weise's style of teaching - giving us a video of content before lectures."

"The fresh style of lectures/learning provided by the young/3rd lecturer was a nice change"

"nicholas Weiss [sic] *was an AMAZING teacher. the best one i have had so far without a doubt"*

"I liked the way Prof Nichloas [sic] *Weise organised the lectures."*

"dr Weiss [sic] *course was fantastic, I enjoyed how each lecture was consisted* [sic] *into a ten minute video with lecture time then spent intera*[c]*tively."*

"Weise's method of having lectures online and workshops for the 1hr lecture time was brilliant and that system throughout chemistry might be a decent idea"

"He gave 7 short videos to watch and we attempted questions based on the material covered in those videos. This was actually helpful, genuinely a new method for us, but I enjoyed it."
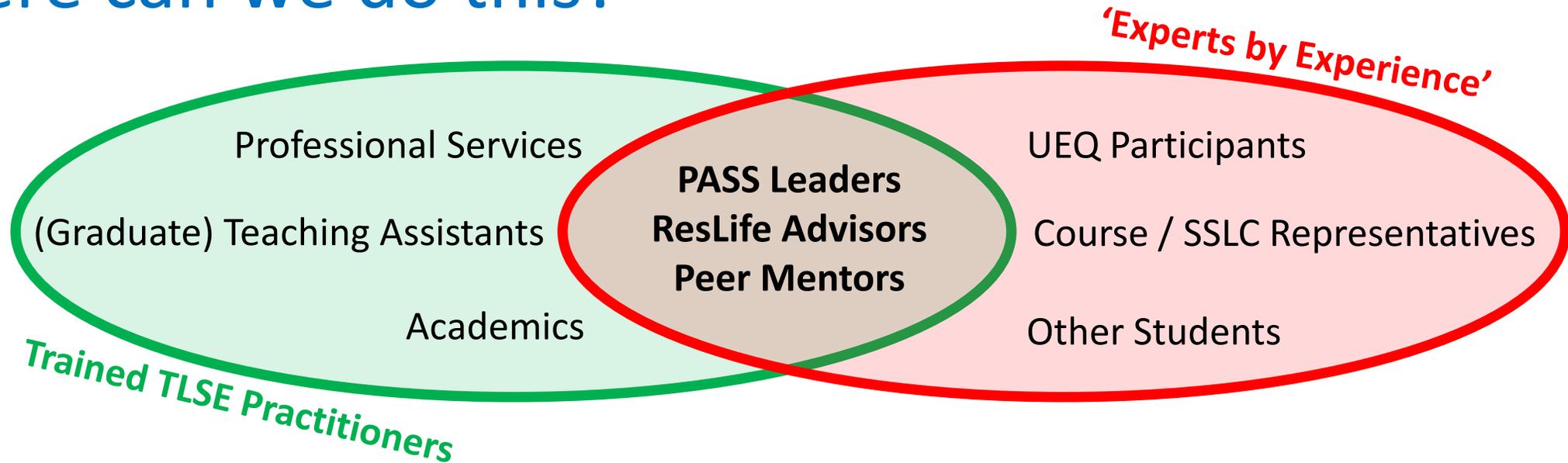
"I like the fact that he didn't lecture like nearly all other lectures do. Standing in front of a screen, clicking slides is a terrible,terrible way to teach. It is so hard to follow and so easy for the lecturer to speak nonsense and consider their job done. ... I really like the fact that Nick looked to educational research to decide on his approach. ..."

"I liked the format. I liked that we would watch the lecture at home and come in with question / go through questions."

"Weise's system is absolutely amazing"

Working with Students
Where can we do this?

'Experts by Experience'

Professional Services

(Graduate) Teaching Assistants

Academics

PASS Leaders
ResLife Advisors
Peer Mentors

UEQ Participants

Course / SSLC Representatives

Other Students

Trained TLSE Practitioners

(Synchronous) Material Reviews:
- CHEM10022 (2018/19)
- CHEM10111 (since 2019/20)
- CHEM20711 (since 2019/20)
- CHEM Online Practicals (2020/21)
- CHEM Unit Peer Dialogue Trial (2021/22)
- Other Departments / Faculty?

Delivery/Provision Consultations:
- PASS Leader Survey for Online Transition (2020)
- PASS Leader Module Design Workshop (2021)

Staff Training/Development in T&L
- Teaching for Researchers (TfR): FSESS7003
- New Academics Programme (NAP): FSE60001

Activity 1

Where do you already partner with student leaders?
Where would you like to? Share your ideas!

(PASS, Peer Mentoring, Ambassadors, Society Committees, etc.)

You'll be put into a small breakout room for a few minutes

Everyone should share their thoughts with the group

Nominate one person to feedback when we return...

Joining Room 1...
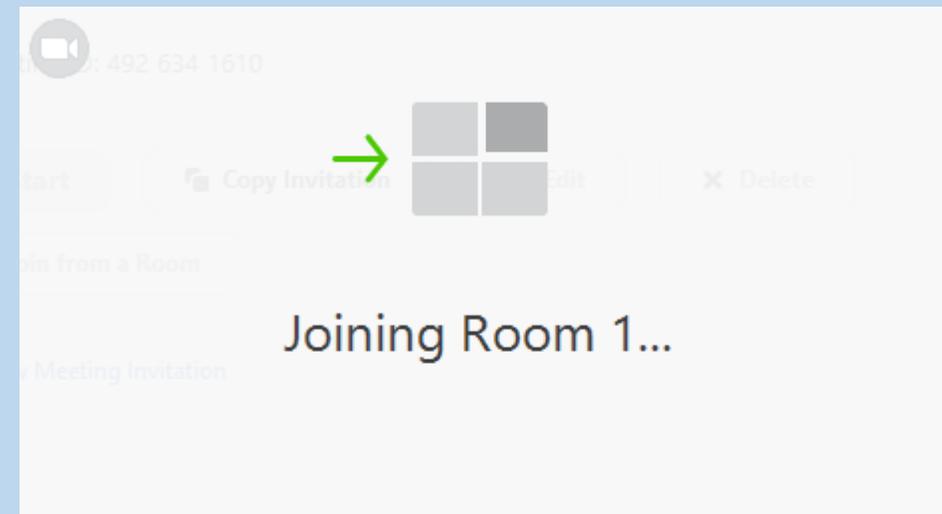
Educational Project Students
Curriculum Review and Student Voice

There are many other places where our students could input regarding flipped learning.

Who is the <u>best</u> placed person to do things?
i.e. who should input on:

Intended Learning Outcomes
Lecture Content
Formative / Practice Questions
Assessments

Lecturer (trained in T&L, subject 'expert')
Educational Project Students (trained in T&L, know curriculum)
Educational Project Students (trained in T&L, know curriculum)
Lecturer (trained in T&L, subject 'expert')

Educational Project Students
Curriculum Review and Student Voice

CHEM30620 3rd Year Group Projects

Unit for those not on placement (final year BSc / 3rd Year MChem) – integrating what they have learned before

Teaching & Scholarship (TAS) Research Section

- 3-4 students identify an area of the chemistry curriculum that they think needs some work

- Together they create a MOOC-format online course to support that area

- Each student makes 1-3 videos, constructively aligned assessments and extra reading material

- The practice is based on their review of the pedagogic / e-learning literature

Educational Project Students

Supporting Student Transitions

Although the project is not limited to supporting transitions, so far project students have chosen to focus on:

- Pre-university to 1st Year (2019/20)
- 1st Year: Semester 1 to Semester 2 (2020-21)
- 2nd to 3rd Year (2020-21)

Imaginary numbers: multiplication and division

Multiplication and addition of imaginary numbers is different to real numbers

Multiplication

$3i \times 4i = 12i^2 = 12 \times -1 = -12$

$3i \times 4i \times 5i = 60i^3 = 60 \times -i = -60i$

$i^3 = i^2 \times i = -1 \times i = -i$

Electrophiles – S_N2 reactions

KEY IDEA: electrophiles with minimal steric hinderance work best for S_N2 reactions

Methyl   Primary   Tertiary

Benzylic   Allylic   α- carbonyl

IONIC

$d^8 - 1 - 1 = d^6$

The $3d_{xy}$, $3d_{xz}$ and $3d_{yz}$ Orbitals

$3d_{xy}$
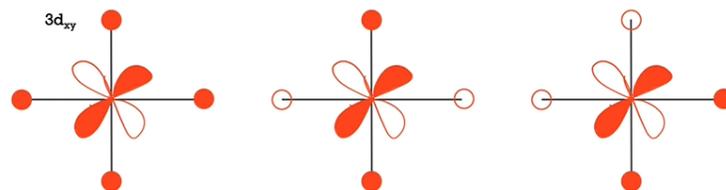
No net overlap between orbitals
Same results for d_{yz} and d_{yz} orbitals
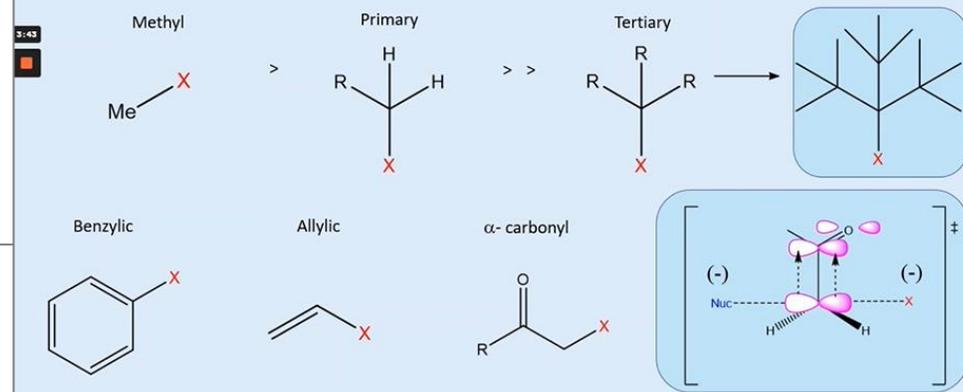
Educational Project Students
Curriculum Review and Student Voice

The materials made are then provided to lecturers for the subsequent year...

"I'd love to be involved in similar projects going forward. For [CHEM Unit] we could use videos for my part of the course"

"We would also benefit from some good quizzes. I'd be really interested in being involved ..."

"Another place that would be interesting would be Outreach videos presenting research results. ... Student views on what we do would be much better I think."

Educational Project Students
Opportunities for Interdisciplinary Projects

Due to their group and educational nature, these projects can be done remotely.

The students only need share knowledge of educational approaches and final output

This opens up the scope for students from different disciplines to collaborate:

CHEM30620		**MATH30000**
2 x 3rd Year Chemists	*plus*	2 x 3rd Year Mathematicians
Project = 24 of 40 credits		Project = 20 of 20 credits
4 weeks in semester 1 + 8 in semester 2		Fits around other modules (whole year)
Co-supervisor: Dr. Nick Weise		Co-supervisor: Prof. Louise Walker

Educational Project Students
Opportunities for Interdisciplinary Projects

Some benefits of interdisciplinary projects may be:

- Better integration of students? Fewer silos?

- More opportunities to network / build social capital?

- Better simulation of research / graduate landscape?

- Sharing of teaching / assessment practice between departments?

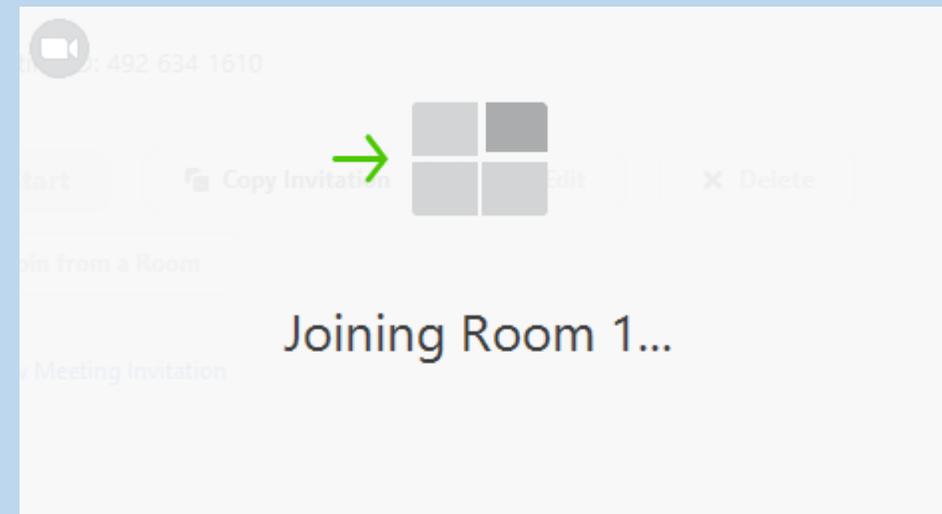- More representative championing of student voice?

Activity 2

What other things are our educational project students best placed to do?

You'll be put into a small breakout room for a few minutes

Everyone should share their thoughts with the group

Nominate one person to feedback when we return…

Reward and Recognition

What can we offer our student partners?

Pre-existing Mechanisms

- PASS Leaders: 'Step Up and Lead' role / Higher Education Achievement Record
- Project Students: 24 of 40 credits of CHEM30620 for their degree

Additional Opportunities:

- PASS Coordinators in some schemes give points / prizes for extra work
- **Associate Fellowship of the Higher Education Academy** (Advance HE Accreditation)

AFHEA Criteria (UK Professional Standards Framework in Higher Education)

Two areas of activity: **A1** (design / plan learning activities), **A5** (undergo and apply professional development)
Core knowledge **K1** (subject/discipline knowledge) and **K2** (knowledge of appropriate pedagogic approaches)
Any number of professional values **V1-4** (including none)

Higher Education Academy Fellowships
Formerly HEA – now Advance HE

Associate Fellowship (AFHEA or D1)

Fellowship (FHEA or D2)

Senior Fellowship (SFHEA or D3)

Principal Fellowship (PFHEA or D4)

Leadership in Education Awards Programme

For Applicants from The University of Manchester

This programme supports anyone working or studying at the University of Manchester in documenting and evidencing how they contribute to learning and the student experience.

It is an opportunity for you to receive a formal, national qualification.

We have no limit on the number of awards given – if you properly evidence your practice against the criteria, we can recommend you for the award.

Once awarded Associate Fellowship, you'll get to put the letters AFHEA after your name for the rest of your life to show that you have been accredited by a professional body for the quality of your contribution to education!

All you need to do is show how what you have already done (teaching, supporting learning, enhancing the student experience, etc.) maps against the **Professional Standards Framework** for Higher Education in the **UK**

The UKPSF in Full

A1: Design and plan learning activities and/or programmes of study

A2: Teach and/or support learning

A3: Assess and give feedback to learners

A4: Develop effective learning environments and approaches to student support and guidance

A5: Engage in continuing professional development in subjects/disciplines and their pedagogy, incorporating research, scholarship and the evaluation of professional practices.

K1: The subject material

K2: Appropriate methods for teaching, learning and assessing in the subject area and at the level of the academic programme

K3: How students learn, both generally and within their subject/disciplinary area(s)

K4: The use and value of appropriate learning technologies

K5: Methods for evaluating the effectiveness of teaching

K6: The implications of quality assurance and quality enhancement for academic and professional practice with a particular focus on teaching

V1: Respect individual learners and diverse learning communities

V2: Promote participation in higher education and equality of opportunity for learners

V3: Use evidence-informed approaches and the outcomes from research, scholarship and continuing professional development

V4: Acknowledge the wider context in which higher education operates recognising the implications for professional practice

Associate Fellowship
Advance HE Guidelines

The descriptor tells us what needs to be demonstrated by an applicant to achieve AFHEA

Advance HE give examples of roles and typical career stages of candidates who might be suitable for AFHEA

As a mentor and assessor for LEAP, I disagree with the role and career stage suggestions...

At this level, basically V3

At this level, basically A5

Descriptor I	Typical individual role/career stage	Related HEA recognition
Demonstrates an understanding of specific aspects of effective teaching, learning support methods and student learning. Individuals should be able to provide evidence of:	Individuals able to provide evidence of effectiveness in relation to their professional role(s), which, typically, will include at least some teaching and/or learning support responsibilities. This teaching and learning role may sometimes be undertaken with the assistance of more experienced teachers or mentors. Typically, those likely to be at Descriptor 1 (D1) include:	
I. Successful engagement with at least two of the five Areas of Activity		
II. Successful engagement in appropriate teaching and practices related to these Areas of Activity	a. Early career researchers with some teaching responsibilities (e.g. PhD students, GTAs, contract researchers/post doctoral researchers etc.)	
III. Appropriate Core Knowledge and understanding of at least K1 and K2		
IV. A commitment to appropriate Professional Values in facilitating others' learning	b. Staff new to teaching (including those with part-time academic responsibilities)	Associate Fellow
V. Relevant professional practices, subject and pedagogic research and/or scholarship within the above activities	c. Staff who support academic provision (e.g. learning technologists, learning developers and learning resource/library staff)	
VI. Successful engagement, where appropriate, in professional development activity related to teaching, learning and assessment responsibilities	d. Staff who undertake demonstrator/technician roles that incorporate some teaching-related responsibilities	
	e. Experienced staff in relevant professional areas who may be new to teaching and/or supporting learning, or who have a limited teaching portfolio	

How will I be Assessed?
What so I actually need to do?

An **oral presentation** (10 minutes max.)

…covering a brief introduction to you along with **<u>two case studies</u>** which highlight how you meet the criteria

Two **referee statements** covering elements of your presentation with direct reference to the UKPSF

(if you have returned to a Peer Support role, we will provide one of the references)

A **document mapping** your experience/evidence against the UKPSF

(A maximum of 1 page A4 handout may be given to the assessors in addition to a copy of your presentation)
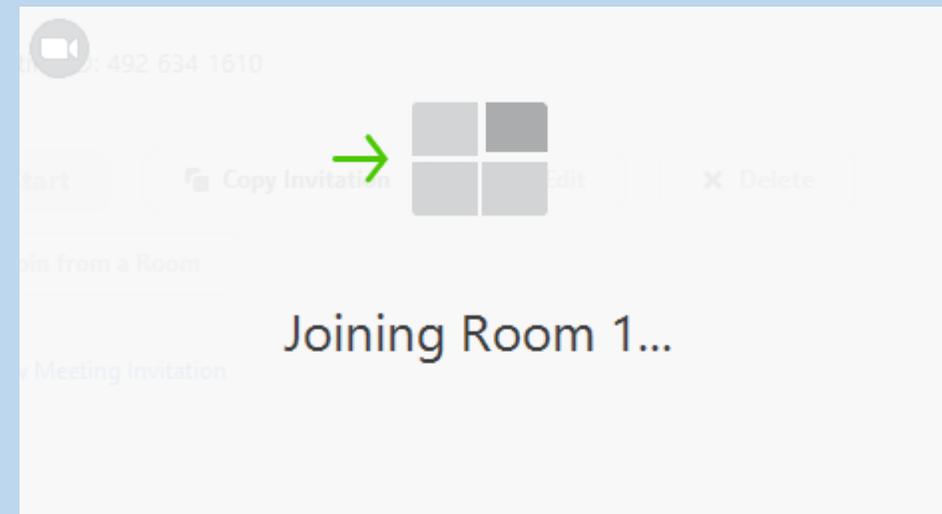
Mentors and Peer Support Groups
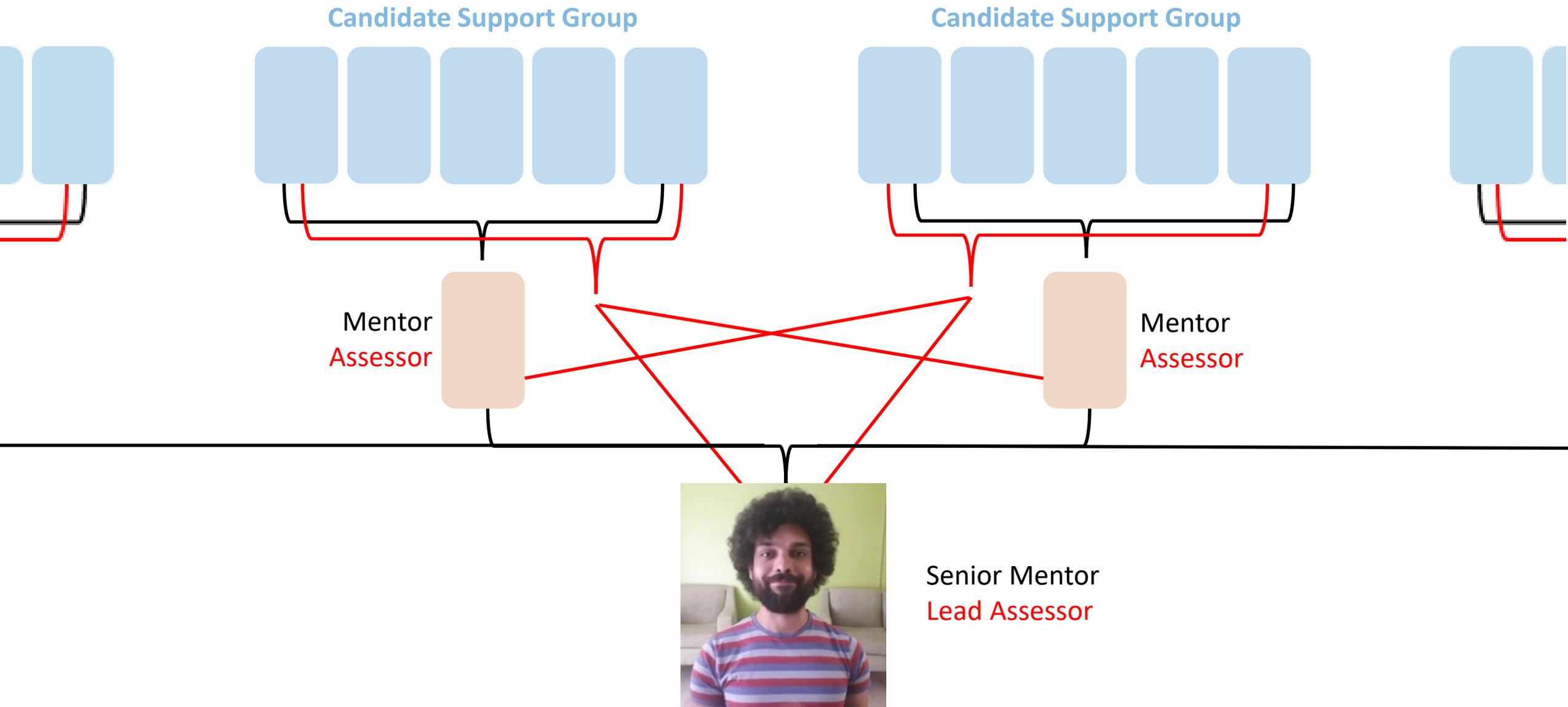
Activity 3

What other ways can we reward and recognise our students as partners in education?

You'll be put into a small breakout room for a few minutes

Everyone should share their thoughts with the group

Nominate one person to feedback when we return…

Joining Room 1…

Acknowledgements

PASS Leaders / Coordinators

Ieva Norvaisaite

Charlotte Mellor **AFHEA**

Beth Rotherham **AFHEA**

Dukula De Alwis Jayasinghe **AFHEA**

Shauna Rogers **AFHEA**

Jacob Cummings

Joana Marujo Nascimento Vidigueira

Lawrence Hawkins **AFHEA**

Emma Conway **AFHEA**

Dev Shah

Ariane Dellavalle

Nikhil Aggarwal

My CHEM30620 Project Students

Samuel Lincoln

Mehrin Sadia

Yijing Zhang

Beatriz Da Costa Honrado

Jordan Pacho **AFHEA**

Nathan O'Grady **AFHEA**

Tanish Dadlani

Henry Olsen

Summer Anani

Alisha Ayyaz

Yichen Huang

Catherine Clayton

Sean Seang Lee

Shuqi An